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दो अक्षीय अंतको वाले बेलनाकार घटक के आयामों का मापन

Indian Standard

MEASUREMENT OF THE DIMENSIONS OF A CYLINDRICAL COMPONENT HAVING TWO AXIAL TERMINATIONS

UDC 621·316·8·621·319·4 : 621·315·684-438 : 006·78 : 621·38·038

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

November 1992 **Price Group 2**

Resistors Sectional Committee, LTD 14

NATIONAL FOREWORD

This Indian Standard, which is identical with IEC Pub 294 (1969) 'Measurement of the dimensions of a cylindrical component having two axial terminations', issued by the International Electrotechnical Commission was adopted by the Bureau of Indian Standards on the recommendation of the Resistors Sectional Committee (LTD 14) and approval of the Electronic and Telecommunication Division Council.

Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

Only the English language text in the International Standard has been retained while adopting it in this Indian Standard.

IS 13554 : 1992
IEC Pub 294 (1969)

Indian Standard

MEASUREMENT OF THE DIMENSIONS OF A CYLINDRICAL COMPONENT HAVING TWO AXIAL TERMINATIONS

1. Scope

This Recommendation applies to cylindrical capacitors and resistors for use in electronic equipment and having two axial terminations.

2. Object

The object of this Recommendation is to give a method of measurement of the dimensions of a component. In Clause 3, a method is given for measuring the length of the body and the length of the terminations. The maximum length of the termination that is covered by coating material can be defined by the method shown in Clause 4. Clause 5 gives a gauge for checking the over-all diameter.

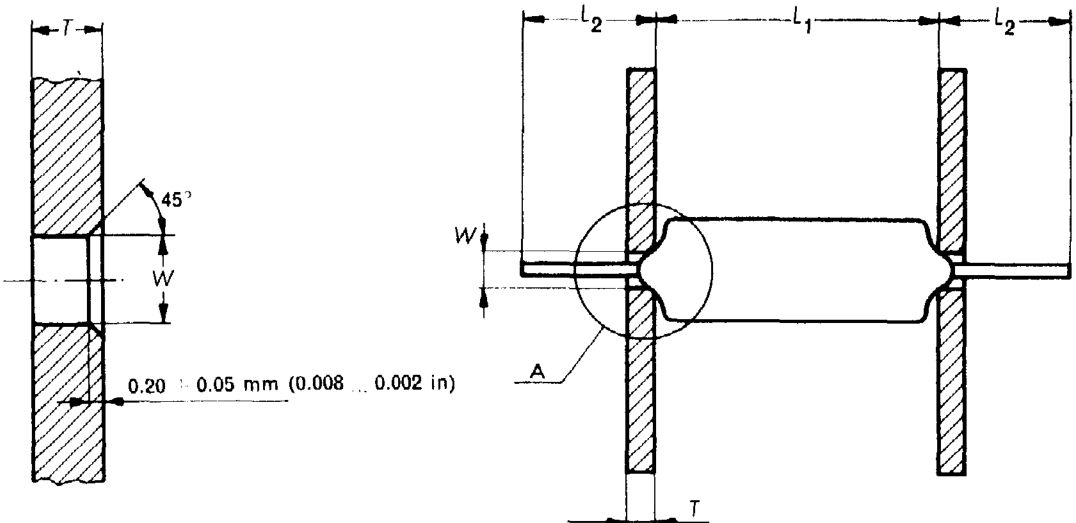
Note. — A measuring method for components with non-axial wire terminations is under consideration.

3. Length

The length of the body shall be measured by inserting the terminations into slots (or holes) of two gauge plates, and by moving these plates parallel to each other until the component body is clamped without deforming the body or the terminations. The plates shall be considered sufficiently close to parallel if, allowing for the size of plate and the distance between the component and the measuring device, the error in measurement due to this cause does not exceed 0.2 mm (0.008 in).

The following types of gauge-plate sets can be distinguished :

3.1 *Gauge plate for components having axial wire terminations* (except those components mentioned in Sub-clause 3.2)



Detail A

FIGURE 1

The length of the body is equal to the measured length L_1, and the length of the termination is equal to L_2.

The width of the slot W (or the diameter of the hole) in the gauge plate shall depend on the diameter of the wire termination in the manner given in the following table:

Nominal diameter of wire terminations	Nominal diameter of wire terminations	Width of slots in gauge plates	
mm	in	± 0.02 mm *	± 0.0008 in *
Up to and including 0.45	Up to and including 0.018	0.80	0.031
> 0.45 up to and including 0.70	> 0.018 up to and including 0.028	1.00	0.039
> 0.70 up to and including 0.90	> 0.028 up to and including 0.036	1.20	0.047
> 0.90 up to and including 1.15	> 0.036 up to and including 0.045	1.50	0.059
> 1.15 up to and including 1.32	> 0.045 up to and including 0.052	1.80	0.071
> 1.32 up to and including 2.00	> 0.052 up to and including 0.079	3.00	0.118

* This tolerance need only be maintained in the locality of the point where the termination will lie during measurement.

3.2 *Gauge plates for components with a diameter of 5 mm (0.20 in) and over, having axial terminations, and with glass-metal seals or with discontinuities in the wire terminations*

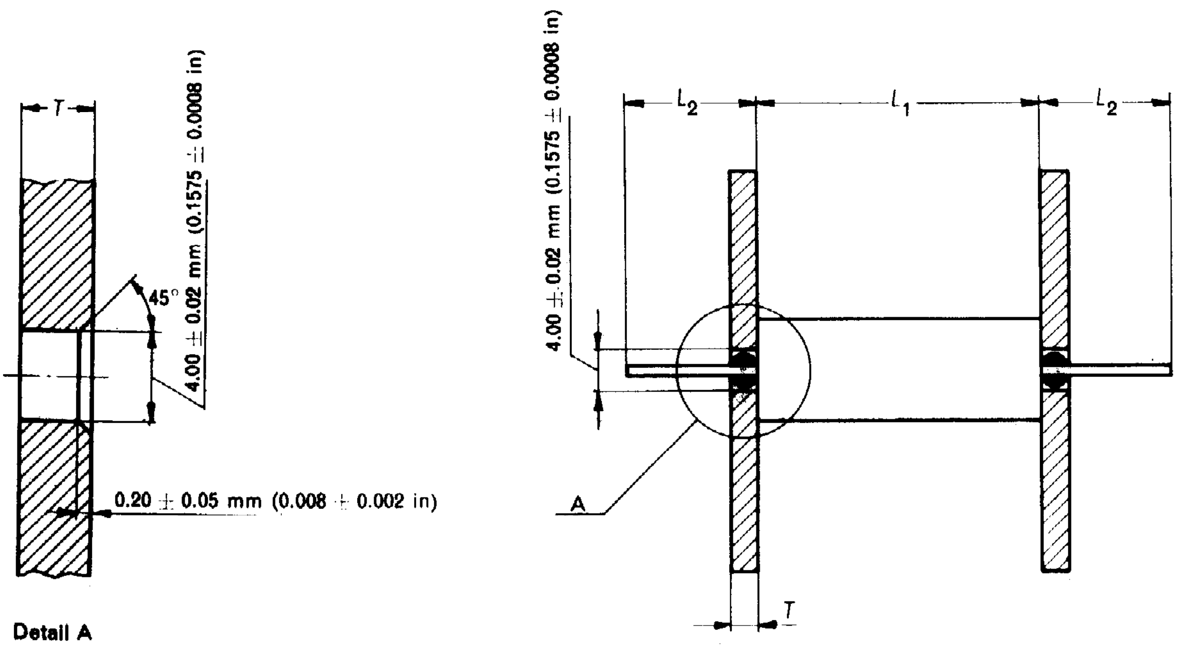

T
4.00 ± 0.02 mm (0.1575 ± 0.0008 in)
45°
0.20 ± 0.05 mm (0.008 ± 0.002 in)
Detail A
4.00 ± 0.02 mm (0.1575 ± 0.0008 in)
L_2
L_1
L_2
A
T

FIGURE 2

If there is a discontinuity in the wire termination, e.g. on components with external welds on the leads and on components provided with glass seals, the thickness of the gauge has no significance in the measurement of length. The length of the component shall be taken as the distance between the inside faces of the gauge plates (L_1), the length of the terminations being equal to L_2.

The width of the slot (or the diameter of the hole) in the gauge plate shall be 4.00 ± 0.02 mm (0.1575 ± 0.0008 in).

Note. — This tolerance need only be maintained in the locality of the point where the termination will lie during measurement.

4. Maximum length of the termination covered by coating material

When the terminations are inserted in the gauge plates and the component is clamped as prescribed under Sub-clause 3.1, no coating material shall extend beyond the gauge plates.

The thickness *T* of the gauge plate shall be specified in the relevant article sheet.

Note. — Recommended values are 1.50 ± 0.05 mm (0.0591 ± 0.0020 in) for components for use on single-sided printed wiring board, and 4.00 ± 0.05 mm (0.1575 ± 0.0020 in) for components for other applications.

5. Method for checking the over-all diameter

For a given diameter, the component shall pass through a straight tube, having an internal diameter equal to the maximum prescribed body diameter + 0.1 mm (0.004 in) with a tolerance of + 0.05 mm (0.002 in) and a length equal to the maximum prescribed body length for that component. The component shall pass through the gauge by its own weight.

The maximum diameter of the component, as given by the manufacturer, shall take into account the irregularities in the shape of the body such as bow, caps on resistors and wire wrapping as part of the terminations of ceramic capacitors, etc.

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